2/13/03

CLEAN SET OF AMENDED CLAIMS
USSN 09/412,886

What I claim is:

1. An improved non-tacky crystal gels comprising:

(I) 100 parts by weight of

(i) one or more poly(ethylene-styrene) interpolymers having one or more glassy components and at least one substantially crystalline components, wherein said (i) copolymers being in combination with a selected amount of one or more selected second copolymers comprising:

(ii) one or more substantially random copolymers having one or more glassy components and one or more crystalline components of moderate crystallinity;

(iii) one or more substantially random copolymers having one or more glassy components and one or more crystalline components of negligible polyethylene crystallinity or low polyethylene crystallinity;

(iv) one or more substantially random copolymers having one or more glassy components and one or more amorphous components;

(v) one or more of a diblock, triblock, multi-arm block, branched block, radial block, or multiblock copolymers, wherein said (v) copolymers having one or more glassy components and one or more elastomeric components of selected crystallinity; and

(vi) one or more of a diblock, triblock, multi-arm block, branched block, radial block, or multiblock copolymers, wherein said (vi) copolymers having one or more glassy components and one or more amorphours elastomeric components;

(vii) a mixture of two or more (ii)-(vi) copolymers;

wherein said (i)-(iii) and (v) copolymers are characterized by one or more polyethylene components of negligible crystallinity, low crystallinity, moderate crystallinity, or of sufficient crystallinity as to exhibit a melting curve at about 10°C or greater as determined by DSC curve;

(II) in combination with or without one or more of selected homopolymers of polystyrene, poly(alpha-methylstyrene), poly(o-methylstyrene), poly(m-methylstryene), poly(p-methylstyrene), or poly(dimethylphenylene oxide); and

(III) a selected amount of one or more compatible plasticizers of sufficient amounts to achieve a stable gel having rigidities of from less than about 2 gram Bloom to about 1,800 gram Bloom.

2. An improved non-tacky crystal gel composition according to claim 1, wherein said crystalline components having a selected crystallinity capable of exhibiting in differential scanning calorimeter (DSC) a melting at about 10°C or higher.

9. A non-tacky crystal gel composition of claim 1 having a minor amount of at least one or more glassy component associating resins having softening points above about 120°C.

10. A gel composite comprising a gel composition, G_n which comprises

(i) 100 parts by weight of one or more poly(styrene-ethylene-ethylene-propylene-styrene) block copolymers; wherein at least one of said block copolymer is a high viscosity copolymer having a viscosity value at 5 weight percent solution in toluene at 30°C of about 90 cps and higher which corresponds to a viscosity at 10 weight percent of about 5800 cps and higher which corresponds to a viscosity at 20 weight percent solids solution in toluene at 2°C of at about 80,000 cps and higher, from

(ii) about 250 to about 1,600 parts by weight of a low viscosity plasticizing oil; said gel compositions characterized by a gel gram Bloom of about 2 to about 1,800 gram bloom; and in combination with or without

(iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)$_n$, poly(styrene-isoprene)$_n$, poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene), poly(styrene-ethylene-propylene)$_n$, poly(styrene-ethylene-butylene)$_n$, polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), poly(styrene-ethylene-propylene-styrene), poly(styrene-ethylene-butylene-styrene), polypropylene, or polyethylene; wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one; and

(iv) with or without a minor amount of at least one or more glassy component associating resins having softening points above about 120°C;

wherein said gel composition is formed into a composite with one or more of a selected substrate material, M, said composite formed from the combination G_nM_n, $G_nM_nG_n$, $M_nG_nM_n$, $M_nG_nG_n$, $M_nM_nM_nG_n$, $M_nM_nM_nG_nM_n$, $M_nG_nG_nM_n$, $G_nM_nG_nG_n$, $G_nM_nM_nG_n$, $G_nG_nM_n$ M_n, $G_nG_nM_nG_nM_n$, $G_nM_nG_nM_nM_n$, $M_nG_nM_nG_nM_nG_n$, $G_nG_nM_nM_nG_n$, $G_nG_nM_nG_nM_nG_n$, a

sequential addition or a permutation of one or more of said G_n with M_n; wherein when n is a subscript of M, n is the same or different selected from the group consisting of foam, plastic, fabric, metal, concrete, wood, glass, ceramics, synthetic resin, synthetic fibers or refractory materials; and wherein when n is a subscript of G, n denotes the same or a different gel rigidity;

wherein a source of said (i) poly(styrene-ethylene-ethylene-propylene-styrene) block polymers being Septon®.

11. A non-tacky gel composition comprising:

(i) 100 parts by weight of one or more hydrogenated styrene block copolymers having 2-methyl-1,3-butadiene and 1,3-butadiene blocks, wherein said block copolymer is a high viscosity copolymer having a viscosity value at 5 weight percent solution in toluene at 30°C of about 90 cps and higher which corresponds to a viscosity at 10 weight percent of about 5800 cps and higher which corresponds to a viscosity at 20 weight percent solids solution in toluene at 25°C of at about 80,000 cps and higher, and from

(ii) about 250 to about 1,600 parts by weight of a low viscosity plasticizing oil; said gelatinous elastomer compositions characterized by a gel gram Bloom rigidity of about 2 to about 2000 gram bloom; and in combination with or without

(iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)$_n$, poly(styrene-isoprene)$_n$, poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene), poly(styrene-ethylene-propylene)$_n$, poly(styrene-ethylene-butylene)$_n$, poly(styrene-ethylene-propylene-styrene), poly(styrene-ethylene-butylene-styrene), polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, or polyethylene, wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one; and with or without

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; wherein a source of said (i) block polymer being Septon®.

12. A non-tacky gel composition comprising:

(i) 100 parts by weight of one or more block copolymer of poly(styrene-ethylene/ethylene-propylene-styrene) of negligible polyethylene crystallinity or low polyethylene crystallinity, wherein said block copolymer is a high viscosity copolymer having a viscosity value at 5 weight percent solution in toluene at 30°C of about 90 cps and higher which corresponds to a viscosity at 10 weight percent of about 5800 cps and higher which corresponds to a viscosity at 20 weight percent solids solution in toluene at 25°C of at about 80,000 cps and higher, and from

(ii) about 250 to about 1,600 parts by weight of a plasticizing oil; said gelatinous elastomer compositions characterized by a gel gram Bloom of about 2 to about 2000 gram bloom; and in combination with or without

(iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)$_n$, poly(styrene-isoprene)$_n$, poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene), poly(styrene-ethylene-propylene)$_n$, poly(styrene-ethylene-butylene)$_n$, poly(styrene-ethylene-propylene-styrene), poly(styrene-ethylene-butylene-styrene), polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, or polyethylene, wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one; and with or without

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; wherein a source of said (i) block polymer being Septon®.

13. A non-tacky gel composition comprising:

(i) 100 parts by weight of one or a mixture of two or more of a hydrogenated styrene isoprene/butadiene block copolymer(s) having selected crystallinity and from

(ii) about 300 to about 1,600 parts by weight of a plasticizing oil; said gelatinous elastomer compositions characterized by a gel rigidity of from about 20 to about 800 gram Bloom; and in combination with or without

(iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)$_n$, poly(styrene-isoprene-styrene)$_n$, poly(styrene-isoprene)$_n$, poly(styrene-ethylene-propylene), poly(styrene-ethylene-propylene- styrene), poly(styrene-

ethylene-butylene-styrene), poly(styrene-ethylene-butylene), poly(styrene-ethylene propylene)$_n$, poly(styrene-ethylene-butylene)$_n$, polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, or polyethylene, wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one; and with or without

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C.

14. A non-tacky gel composition comprising:

(i) 100 parts by weight of one or a mixture of two or more of a hydrogenated styrene isoprene/butadiene block copolymer(s) and

(ii) from about 300 to about 1,600 parts by weight of an plasticizing oil; wherein said gelatinous elastomer compositions characterized by a gel rigidity of from about 20 to about 800 gram Bloom; in combination with or without

(iii) a selected amount of one or more polymer or copolymer of poly(styrene-butadiene-styrene), poly(styrene-butadiene)$_n$, poly(styrene-isoprene-styrene), poly(styrene-isoprene)$_n$, poly(styrene-ethylene-propylene), poly(styrene-ethylene-propylene-styrene), poly(styrene-ethylene-butylene-styrene), poly(styrene-ethylene-butylene), poly(styrene-ethylene propylene)n, poly(styrene-ethylene-butylene)$_n$, polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, or polyethylene, wherein said selected copolymer is a linear, radial, branched, star-shaped, or multiarm copolymer, and n is an integer greater than one; and with or without

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; wherein a source of said (i) block polymer being Septon®.

15. A non-tacky gel composition comprising:

(i) 100 parts by weight of one or a mixture of two or more of a hydrogenated styrene block copolymer(s) of selected crystallinity with 2-methyl-1,3-butadiene and 1,3-butadiene and

(ii) from about 300 to about 1,600 parts by weight of an plasticizing oil; wherein said gelatinous elastomer compositions characterized by a gel rigidity of from about 20 to about

800 gram Bloom; in combination with or without

(iii) a selected amount of one or more selected polymer or copolymer selected from the group consisting of poly(styrene-butadiene-styrene), poly(styrene-butadiene), poly(styrene-isoprene-styrene), poly(styrene-isoprene), poly(styrene-ethylene-propylene), poly(styrene-ethylene-propylene-styrene), poly(styrene-ethylene-butylene-styrene), poly(styrene-ethylene-butylene), poly(styrene-ethylene propylene)$_n$, poly(styrene-ethylene-butylene)$_n$, polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, or polyethylene, wherein said selected copolymer is a linear, radial, branched, star-shaped, or multiarm copolymer; and n is an integer greater than one, and

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C.

16. A gel composition comprising:

(i) 100 parts by weight of one or ~~a mixture of two or~~ more of poly(styrene-ethylene-ethylene-propylene-styrene) block copolymer(s) of and

(ii) from about 300 to about 1,600 parts by weight of an plasticizing oil, and in combination with or without

(ii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene), poly(styrene-isoprene-styrene), poly(styrene-isoprene), poly(styrene-ethylene-propylene), poly(styrene-ethylene-propylene-styrene), poly(styrene-ethylene-butylene-styrene), poly(styrene-ethylene-butylene), poly(styrene-ethylene propylene)$_n$, poly(styrene-ethylene-butylene)$_n$, polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, or polyethylene, wherein said selected copolymer is a linear, branched, radial, star-shaped, or multiarm copolymer; and n is an integer greater than one; and with or without

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; wherein a source of said (i) poly(styrene-ethylene-ethylene-propylene-styrene) block polymers being Septon®.

17. A non-tacky gel of claim 10 wherein said hydrogenated styrene block copolymer is one or more of a block copolymer of poly(styrene-ethylene-ethylene-propylene-styrene).

18. A composite article of claim 11, wherein a source of said hydrogenated poly(styrene-isoprene/butadiene-styrene) block polymer being Septon® 4033, Septon® 4045, and Septon® 4055 and said resins being Aldrich Nos.: 32,771-9 (2,500M_w), 32,772-7 (4,000 Mw), 37,951-4 (13,000 Mw), 32-774-3 (20,000 Mw), 32,775-1 (35,000 Mw), 33,034-5 (50,000 Mw), 32,777-8 (90,000 Mw), poly(alpha-methylstyrene) #41,794-7 (1,300 Mw), 19,184-1 (4,000 Mw); poly(4-methylstyrene) #18,227-3 (72,000 Mw); Hercules Chemical: Endex 155, 160, Kristalex 120, 140; (Regalrez 1126, 1128, 1139, 3102, 5095, and 6108), hydrogenated mixed aromatic resins (Regalite R125), Picco 5130, 5140, 9140; GE: Blendex HPP820, HPP822, HPP823; Cumar LX509, Cumar 130, Lx-1035).

19. A composite formed from the gel compositions of claim 16 comprising:
(I) 100 parts by weight of

(i) one or more poly(ethylene-styrene) interpolymers~~)~~ having one or more glassy components and at least one substantially crystalline components, wherein said (i) copolymers being in combination with a selected amount of one or more selected second copolymers comprising:

(ii) one or more substantially random copolymers having one or more glassy components and one or more crystalline components of moderate crystallinity;

(iii) one or more substantially random copolymers having one or more glassy components and one or more crystalline components of low crystallinity;

(iv) one or more poly(ethylene-styrene), interpolymers, produced by metallocene catalysts, having one or more glassy components and one or more amorphous polyethylene components;

(v) one or more of a diblock, triblock, multi-arm block, branched block, radial block, or multiblock copolymers, wherein said (v) copolymers having one or more glassy components and one or more elastomeric components of selected crystallinity; and

(vi) one or more of a diblock, triblock, multi-arm block, branched block, radial block, or multiblock copolymers, wherein said (vi) copolymers having one or more glassy components and one or more amorphous elastomeric components;

(vii) a mixture of two or more (ii)-(vi) copolymers;

wherein said (i), (ii), and (iii)~~-and (v)~~ copolymers are characterized by sufficient crystallinity as to exhibit a melting endotherm of at least about 10°C as determined by DSC curve, and

wherein said (v) copolymers are capable of exhibiting negligible, low, or moderate crystallinity;

(II) in combination with or without one or more of selected homopolymers; and

(III) a selected amount of one or more compatible plasticizers of sufficient amounts to achieve a stable gel having rigidities of from less than about 2 gram Bloom to about 1,800 gram;

wherein said gel composition denoted by G, which is formed into a composite with one or more of a selected substrate material, M, said composite formed from the combination G_nM_n, $G_nM_nG_n$, $M_nG_nM_n$, $M_nG_nG_n$, $M_nM_nM_nG_n$, $M_nM_nM_nG_nM_n$, $M_nG_nG_nM_n$, $G_nM_nG_nG_n$, $G_nM_nM_nG_n$, $G_nG_nM_n M_n$, $G_nG_nM_nG_nM_n$, $G_nM_nG_nM_nM_n$, $M_nG_nM_nG_nM_nG_n$, $G_nG_nM_nM_nG_n$, $G_nG_nM_nG_nM_nG_n$, a sequential addition or a permutation of one or more of said G_n with M_n; wherein when n is a subscript of M, n is the same or different selected from the group consisting of foam, plastic, fabric, metal, concrete, wood, glass, ceramics, synthetic resin, synthetic fibers or refractory materials; and wherein when n is a subscript of G, n denotes the same or a different gel rigidity.

---

20. A non-tacky gel composition comprising:

(i) 100 parts by weight of one or a mixture of two or more poly(styrene-ethylene-ethylene-propylene-styrene) block copolymer(s); from

(ii) about 300 to about 1,600 parts by weight of a plasticizing oil; said gel composition characterized by a gel rigidity of from about 20 to about 800 gram Bloom; and in combination with

(iii) a selected amount of one or more block copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)$_n$, and poly(styrene-ethylene-butylene-styrene), wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one.

(twice amended) 21. A non-tacky gel composition comprising:

(i) 100 parts by weight of one or a mixture of two or more poly(styrene-ethylene-ethylene-propylene-styrene) block copolymer(s); from

(ii) about 300 to about 1,600 parts by weight of a plasticizing oil; said gel composition

characterized by a gel rigidity of from about 20 to about 800 gram Bloom; and in combination with

(iii) a selected amount of one or more block copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)$_n$, poly(styrene-ethylene-propylene-styrene), and poly(styrene-ethylene-butylene-styrene), wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one.

22. A composite according to claim 15, wherein said hydrogenated styrene block polymer is one or more of a block copolymer of poly(styrene-ethylene-ethylene-propylene-styrene), and a source of said poly(styrene-ethylene-ethylene-propylene-styrene) being Septon® 4033, Septon® 4045, and Septon® 4055 and said resins being Hercules Chemical: Endex 155, 160, Kristalex 120, 140; (Regalrez 1126, 1128, 1139, 3102, 5095, and 6108), (Regalite R125), Picco 5130, 5140, 9140; and GE: Blendex HPP820, HPP822, HPP823.

23. A non-tacky gel composition comprising:

(i) 100 parts by weight of one or more block copolymer of poly(styrene-ethylene-ethylene propylene-styrene) exhibiting selected crystallinity, and from

(ii) about 300 to about 1,600 parts by weight of a low viscosity plasticizing oil; with or without

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; and said resins being Hercules Chemical: Endex 155, 160, Kristalex 120, 140; (Regalrez 1126, 1128, 1139, 3102, 5095, and 6108), hydrogenated mixed aromatic resins (Regalite R125), Picco 5130, 5140, 9140; and GE: Blendex HPP820, HPP822, HPP823.

24. A non-tacky gel composition, comprising: (i) 100 parts by weight of one or more of a hydrogenated styrene isoprene/butadiene copolymer exhibiting selected crystallinity, wherein a source of said copolymers being Septon® 4033, Septon® 4045, and Septon® 4055 and from

(ii) about 300 to about 1,600 parts by weight of a low viscosity plasticizing oil;

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; and said resins being Hercules Chemical: Endex 155,

160, Kristalex 120, 140; (Regalrez 1126, 1128, 1139, 3102, 5095, and 6108), hydrogenated mixed aromatic resins (Regalite R125), Picco 5130, 5140, 9140.

25. A non-tacky gel composition, comprising:

(i) 100 parts by weight of a hydrogenated styrene isoprene/butadiene copolymer; wherein a source of said block copolymer being Septon® 4033, Septon® 4045, and Septon® 4055, and from

(ii) about 300 to about 1,600 parts by weight of a low viscosity plasticizing oil;

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; and said resins being Hercules Chemical: Endex 155, 160, Kristalex 120, 140.

C5 cont'd

26. A non-tacky gel composition, comprising:

(i) 100 parts by weight of one or more block copolymers of poly(styrene-ethylene-ethylene propylene-styrene) exhibiting selected crystallinity, wherein a source of said block copolymers being Septon® 4033, Septon® 4045, and Septon® 4055, and from

(ii) about 300 to about 1,600 parts by weight of a low viscosity plasticizing oil;

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; and said resins being Hercules Chemical: Regalrez 1126, 1128, 1139, 3102, 5095, and 6108, hydrogenated mixed aromatic resins (Regalite R125), Picco 5130, 5140, 9140.

27. A non-tacky gel composition, comprising: (i) 100 parts by weight of one or more of a hydrogenated styrene isoprene/butadiene copolymers; wherein a source of said block copolymers being Septon® 4033, Septon® 4045, and Septon® 4055 and from

(ii) about 300 to about 1,600 parts by weight of a low viscosity plasticizing oil; and in combination with or without

(iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-isoprene-styrene), poly(styrene-ethylene-butylene-styrene), poly(styrene-ethylene-propylene-styrene), poly(styrene-butadiene)$_n$, poly(styrene-isoprene)$_n$, poly(styrene-ethylene-propylene)$_n$, poly(styrene ethylene-butylene)n, polystyrene, polybutylene, polyethylene, polypropylene;

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; and said resins being GE: Blendex HPP820, HPP822, and HPP823.

28. A non-tacky gel composition, comprising:

(i) 100 parts by weight of s hydrogenated styrene block copolymers having 2-methyl-1,3 butadiene and 1,3-butadiene blocks; wherein a source of said block copolymers being Septon® 4033, Septon® 4045, and Septon® 4055, and from

(ii) about 300 to about 1,600 parts by weight of a plasticizing oil; and in combination with or without

(iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-isoprene-styrene), poly(styrene-ethylene-butylene-styrene), poly(styrene-ethylene-propylene-styrene), poly(styrene-butadiene)n, poly(styrene-isoprene)$_n$, poly(styrene-ethylene-propylene)$_n$, poly(styrene ethylene-butylene)$_n$, polystyrene, polybutylene, polyethylene, polypropylene; wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one;

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; and said resins being Aldrich Nos.: 32,771-9 (2,500M_w), 32,772-7 (4,000 Mw), 37,951-4 (13,000 Mw), 32-774-3 (20,000 Mw), 32,775-1 (35,000 Mw), 33,034-5 (50,000 Mw), 32,777-8 (90,000 Mw), poly(alpha-methylstyrene) #41,794-7 (1,300 Mw), 19,184-1 (4,000 Mw); poly(4-methylstyrene) #18,227-3 (72,000 Mw).

29. A non-tacky gel composition, comprising:

(i) 100 parts by weight of one or more block copolymer of poly(styrene-ethylene-ethylene propylene-styrene), wherein a source of said block copolymer being Septon® 4033, Septon® 4045, and Septon® 4055 and from

(ii) about 300 to about 1,600 parts by weight of a plasticizing oil; and in combination with or without

(iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-isoprene-styrene), poly(styrene-ethylene-butylene-styrene), poly(styrene-ethylene-propylene-styrene), poly(styrene-butadiene)$_n$, poly(styrene-isoprene)$_n$,

poly(styrene-ethylene-propylene)$_n$, poly(styrene ethylene-butylene)$_n$, polystyrene, polybutylene, polyethylene, polypropylene; wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one;

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; and said resins being Aldrich Nos.: 32,771-9 (2,500M_w), 32,772-7 (4,000 Mw), 37,951-4 (13,000 Mw), 32-774-3 (20,000 Mw), 32,775-1 (35,000 Mw), 33,034-5 (50,000 Mw), 32,777-8 (90,000 Mw), poly(alpha-methylstyrene) #41,794-7 (1,300 Mw), 19,184-1 (4,000 Mw); poly(4-methylstyrene) #18,227-3 (72,000 Mw); Hercules Chemical: Endex 155, 160, Kristalex 120, 140.

30. A composite comprising a gel composition, G_n, formed from

(i) 100 parts by weight a block copolymer comprising poly(styrene-ethylene-ethylene-propylene styrene), wherein a source of said block copolymer being Septon® 4033, Septon® 4045, and Septon® 4055, and from

C5 cont'd

(ii) about 300 to about 1,600 parts by weight of a selected plasticizing oil; and in combination with or without

(iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-isoprene-styrene), poly(styrene-ethylene-butylene-styrene), poly(styrene-ethylene-propylene-styrene), poly(styrene-butadiene)$_n$, poly(styrene-isoprene)$_n$, poly(styrene-ethylene-propylene)$_n$, poly(styrene ethylene-butylene)$_n$, polystyrene, polybutylene, polyethylene, polypropylene; wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one; with or without

(iv) a minor amount of at least one or more glassy component associating resins having softening points above about 120°C; and said resins being Hercules Chemical: Regalrez 1126, 1128, 1139, 3102, 5095, and 6108;

wherein said gel composition denoted by G, which is formed into a composite with one or more of a selected substrate material, M, said composite formed from the combination G_nM_n, $G_nM_nG_n$, $M_nG_nM_n$, $M_nG_nG_n$, $M_nM_nM_nG_n$, $M_nM_nM_nG_nM_n$, $M_nG_nG_nM_n$, $G_nM_nG_nG_n$, $G_nM_nM_nG_n$, $G_nG_nM_n M_n$, $G_nG_nM_nG_nM_n$, $G_nM_nG_nM_nM_n$, $M_nG_nM_nG_nM_nG_n$, $G_nG_nM_nM_nG_n$, $G_nG_nM_nG_nM_nG_n$, a sequential addition or a permutation of one or more of said G_n with M_n; wherein when n is a subscript of M, n is the same or different selected from the group

consisting of foam, plastic, fabric, metal, concrete, wood, glass, ceramics, synthetic resin, synthetic fibers or refractory materials; and wherein when n is a subscript of G, n denotes the same or a different gel rigidity..

31. A prosthetic device comprising a lower extremity socket insert for below knee or above knee with or without a cuff suspension formed from a gel composition of claim 16.

32. A prosthetic device comprising a lower extremity socket insert for below knee or above knee with or without a cuff suspension formed from a gel composite claim 10, wherein M is a fabric.

33. A composite of claim 20, wherein said hydrogenated styrene block copolymer(s) with 2-methyl-1,3-butadiene and 1,3-butadiene is poly(styrene-ethylene-ethylene propylene-styrene) exhibiting selected crystallinity, and a source of said poly(styrene-ethylene-ethylene-propylene-styrene) being Septon® 4033, Septon® 4045, and Septon® 4055 and said resins being Aldrich Nos.: 32,771-9 (2,500M_w), 32,772-7 (4,000 Mw), 37,951-4 (13,000 Mw), 32-774-3 (20,000 Mw), 32,775-1 (35,000 Mw), 33,034-5 (50,000 Mw), 32,777-8 (90,000 Mw), poly(alpha-methylstyrene) #41,794-7 (1,300 Mw), 19,184-1 (4,000 Mw); poly(4-methylstyrene) #18,227-3 (72,000 Mw); Hercules Chemical: Endex 155, 160, Kristalex 120, 140; (Regalrez 1126, 1128, 1139, 3102, 5095, and 6108), hydrogenated mixed aromatic resins (Regalite R125), Picco 5130, 5140, 9140; GE: Blendex HPP820, HPP822, HPP823; Cumar LX509, Cumar 130, Lx-1035).